

GUANGYANG SECONDARY SCHOOL
2023 Semester Plan
Sec 3E – Design & Technology

Term 1	Topic	Remarks
Week 1	1. Coursework Essentials & Expectations/ Design Model / Design Process. 2. Basic Sketching: Cube Manipulation 3. Basic Sketching: Cube Manipulation (Emphasis: sketching skills)	
Week 2	1. Basic Sketching; Forms Sketching Techniques 2. Basic Sketching; Forms Sketching Techniques 3. Basic Sketching; Forms Sketching Techniques (Emphasis: sketching skills)	
Week 3	1. Basic Sketching; Forms Sketching Techniques 2. Basic Sketching; Forms Sketching Techniques 3. Basic Sketching; Forms Sketching Techniques (Sketching with Interface) (Emphasis: sketching skills)	E-Ped Lesson
Week 4 CNY Holidays	1. Initial Ideas (Thematic: for defined design opportunity: Phone Cooler) 2. Ideation – Based on shape borrowing technique 3. GDI, Sketching to Design (Emphasis: sketching skills, presenting ideas)	
Week 5	1. Initial Ideas (Thematic: for defined design opportunity: Phone Cooler) 2. Ideation – Based on SCAMPER technique 3. GDI, Sketching to Design (Emphasis: sketching skills, presenting ideas)	
Week 6	1. GDI, Sketching to Design – Development Sketches 2. GDI, Sketching to Design - Development Sketches 3. GDI, Sketching to Design - Development Sketches (Emphasis: sketching skills, presenting ideas)	
Week 7	1. Design Model, Project Planning 2. WA1 / Practical Session 3. Structure lesson 1 (function, structure types, loading types)	
Week 8	1. Need Definition, Situation, Design Opportunity, Initial Ideas/Solutions (Theme: Secure) 2. Practical Session 3. Structure lesson 2 (loading and structural failure, stability in design)	E-Ped Lesson (PDLD information gathering)
Week 9	1. Need Definition, Situation, Design Opportunity, Initial Ideas/Solutions 2. Practical Session 3. Structure lesson 3 (structural reinforcement)	
Week 10 WEALTH Wk	1. Need Definition, Situation and Design Opportunity. Initial Ideas/Solutions 2. Practical Session 3. Structure lesson 4 (structural reinforcement)	VR Goggles for 3D experiences
Term 2	Topic	
Week 1	1. Design Brief. Research techniques on UEF – Research outline, observations, interview, survey. 2. Practical Session 3. Structure lesson 5 (Group Activity – Building tall structures)	E-Ped Lesson (PDLD for data collection)
Week 2	1. Design Brief. Research Techniques on UEF - Research outline, observations, interview, survey. 2. Practical Session	

	3. Structure lesson 6 (Discussion: Past O-level Question)	
Week 3 Good Friday	1. Research Technique: Design Factors, Product Analysis. 2. Practical Session 3. Mechanism lesson 1 (motions, functions, types: lever, linkages)	
Week 4	1. Research Technique: Design Factors, Product Analysis. 2. WA2 / Practical Session 3. Mechanism lesson 2 (crank, pulley, gears, rack and pinion)	
Week 5	1. Research Conclusion, Design Considerations, Specifications 2. Practical Session 3. Mechanism lesson 2 (crank, pulley, gears, rack and pinion)	
Week 6 Hari Raya Puasa	1. Specifications 2. Practical Session 3. Mechanism lesson 4 (Construction of mechanical kits)	
Week 7 Labour Day Vesak Day	1. GDI – Ideation 2. Practical Session 3. Mechanism lesson 5 (3D Printing Activity: Cam design/construction)	E-Ped Lesson (digital sketch)
Week 8	1. GDI – Ideation 2. Practical Session 3. Mechanism lesson 6 (Discussion: Past O-level Question)	E-Ped Lesson (digital sketch)
Week 9	1. GDI – Ideation and Development 2. Practical Session 3. Electronics lesson 1 (electricity basics)	
Week 10	1. GDI – Ideation and Development 2. Practical Session 3. Electronics lesson 2 (IPO, sensors, transistors, output components)	
Term 3	Topic	
Week 1 Youth Day	1. GDI – Ideation and Development 2. Practical Session 3. Electronics lesson 3 (IPO, sensors, transistors, output components)	
Week 2	1. GDI – Idea Development (Data Collection for dimensioning and sizing) 2. Practical Session 3. Electronics lesson 4 (IPO application of electronics on various situations)	E-Ped Lesson (PDLD for data collection)
Week 3	1. GDI – Idea Development (Anthropometry and Ergonomics) 2. Practical Session 3. Electronics lesson 5 (IPO application with physical electronic kits)	E-Ped Lesson (PDLD for data collection)
Week 4	1. GDI – Critical Dimensions 2. WA3 / GDI – Critical Dimensions 3. Electronics lesson 6 (Discussion: Past O-level Question)	
Week 5	1. GDI – Mock-Up Construction	
Week 6	1. GDI – Mock-Up Construction	
Week 7 National Day	1. GDI – Mock-Up Construction	
Week 8	1. GDI - Use of Mock-up for Testing	E-Ped Lesson (digital sketch)
Week 9	1. GDI - Use of Mock-up for Testing 2. Revision: TYS (Design)	E-Ped Lesson (digital sketch)

Week 10 Teachers Day	1. GDI – Final Idea 2. Fine tuning dimension, drafting material list 3. Revision: TYS (Structures)	
Term 4	Topic	
Week 1	1. Material List, Working Drawing 2. Part Drawing 3. Revision: TYS (Mechanisms)	
Week 2	1. Part Drawing 2. Part Drawing 3. Revision: TYS (Electronics)	
Week 3	End of Year Examinations	
Week 4	End of Year Examinations	
Week 5	1. Review of EOY exam paper & key points. 1. Presentation Board: Presentation Drawing, Contextual Use Drawing, Product Rendering - Use of Underlays	
Week 6	Head Start Programme (Part 1): Presentation Board: Presentation Drawing, Contextual Use Drawing, Product Rendering - Use of Underlays -	
Week 7	Head Start Programme (Part 2): - Presentation Board: Presentation Drawing, Contextual Use Drawing, Product Rendering – Use of Google Slides for presentation	E-Ped Lesson (Google Slides for presentation)

Assessment

WA1, WA2, WA3	15%	15%	15%
	Written Test		
EOY Exam	55%		
	Written Exam + Coursework		

**Please note that the topics might be subject to minor changes. Students will be updated accordingly.*